Resurrection Creek Stream Channel and Riparian Restoration Project

Background

The Resurrection Creek Stream Channel and Riparian Restoration Project is located on the Kenai Peninsula, five miles south of Hope, Alaska (see ***Figure 1***). The project area was hydraulically mined during the first four decades of the 1900's. Miners used high pressure water jets to strip away surface vegetation and soils, and to sort through the underlying alluvial gravels for gold.

The mining operations left behind a straightened, simplified stream channel without its former floodplain and side channels. Mounded tailings piles now cover the original flat, floodplain, and restrict both Resurrection and Palmer Creeks from spilling onto their flood-plain during high flow events. The steep tailings piles are composed of coarse gravels, cobbles and boulders, and provide poor conditions for regrowth of the riparian vegetation removed during mining. Changes in stream channel and riparian characteristics resulting from hydraulic mining are quantified in a report entitled "Resurrection Creek Stream Channel and Riparian Restoration Analysis". This document, along with progress reports, the 2005 monitoring report, and other project related information are available for review on the internet at: http://www.fs.fed.us/r10/chugach/news_releases/res_creek_rest.html

Project Goals

Phase I of the Resurrection Creek Project will restore one mile of stream channel and adjacent floodplain and riparian habitat from the adverse impacts of historic placer mining. Restoration efforts are intended to return the area to pre-mining conditions, and to enhance fish and wildlife habitat on public and private lands.

The project will increase: spawning substrate, pools, large in-stream woody debris, and perennial side channels for trout and salmon (all five Pacific species). It will increase rearing and over-wintering habitat for coho and chinook salmon. Aquatic vertebrate and invertebrate populations have responded positively to the stream channel and riparian rehabilitation. Riparian vegetation abundance and diversity will increase, improving wildlife habitat.

Figure 2 displays a photographic overview of the project area with both the completed 2005 construction and the planned 2006 construction overlaid on top. Through the restoration, Resurrection Creek will be increased in length and sinuosity. Side channel flow is greatly increased for both Resurrection and Palmer Creeks. Spawning size substrate has been placed within pools and glides. Tailings piles have been leveled to recreate the former floodplain. Resurrection and Palmer Creek high-water flow events (greater than 2-year floods) will once again have access to the floodplain.

During project construction, large woody debris is being returned to Resurrection and Palmer Creeks.

Log jams built on stream meander outcurves provide short-term bank protection (until woody vegetation has become well-rooted along the bank.) Logjams also increase instream pool habitat, and provide an important nutrient supply for fish.

Following construction of new stream channels, soils is imported to cover the floodplains and a mix of grasses, shrubs, and trees are being planted. Woody debris is placed on the floodplain for habitat, nutrient supply, and flood flow velocity reduction.

Current Situation

The Forest Service completed the Final Environmental Impact Statement for this project in November 2004 and received no appeals. State and Federal permits for the project were in place by the spring of 2005.

In 2005 the Forest Service completed channel, side channel, logjam, and floodplain construction for most of the lower 0.7 miles of the project area. Soil and large wood were spread on the newly created floodplains. Newly created channel segments were put to use by spawning salmon almost immediately following construction.

Channel and floodplain construction have been completed a meander bend at a time, starting at the lower end of the project area. The majority of the channel work is done "in the dry", including development of design channel cross sections, construction of riffle-run-pool-glide sequences along the channel, and placement of appropriately-sized substrate within the channel segments.

Construction work in 2006 will focus on channel and floodplain construction in the upper 0.3 miles of the project area. This included 0.2 miles of restoration on Palmer Creek. Restoration construction should be complete by July 2006.

In 2006 we will also commence work on revegetating the newly created floodplains. The revegetation work is being done in partnership with the private, non-profit Youth Restoration Corps. YRC will be planting trees and shrubs, and seeding native grasses. Revegetation will focus on the floodplains and particularly along the stream channel and side sloughs. YRC will be teaming with the Hope School to monitor the revegetation efforts. The revegetation work is likely to continue for two to three summers.

More Information

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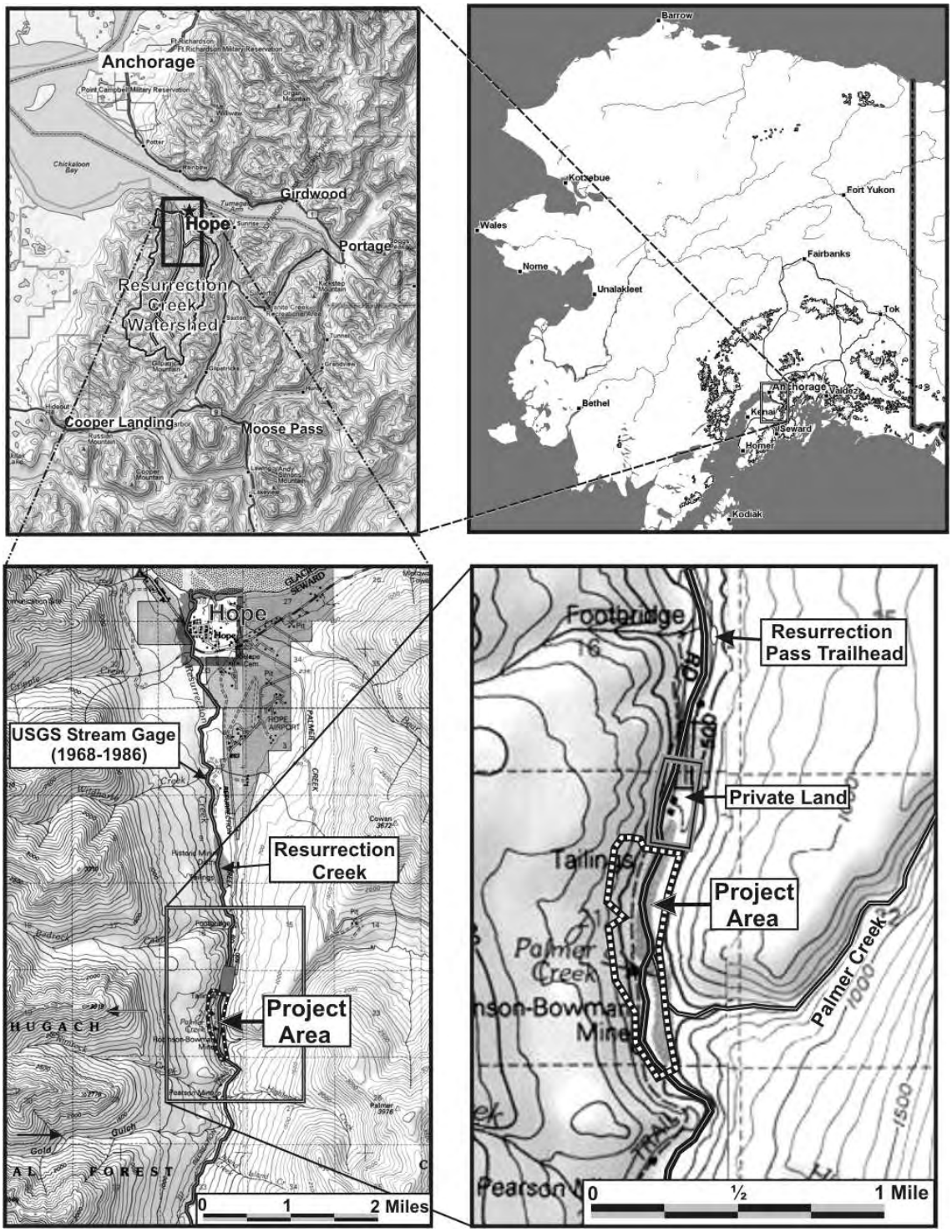
Figure 1 – Location Map - Resurrection Creek Stream Restoration Project



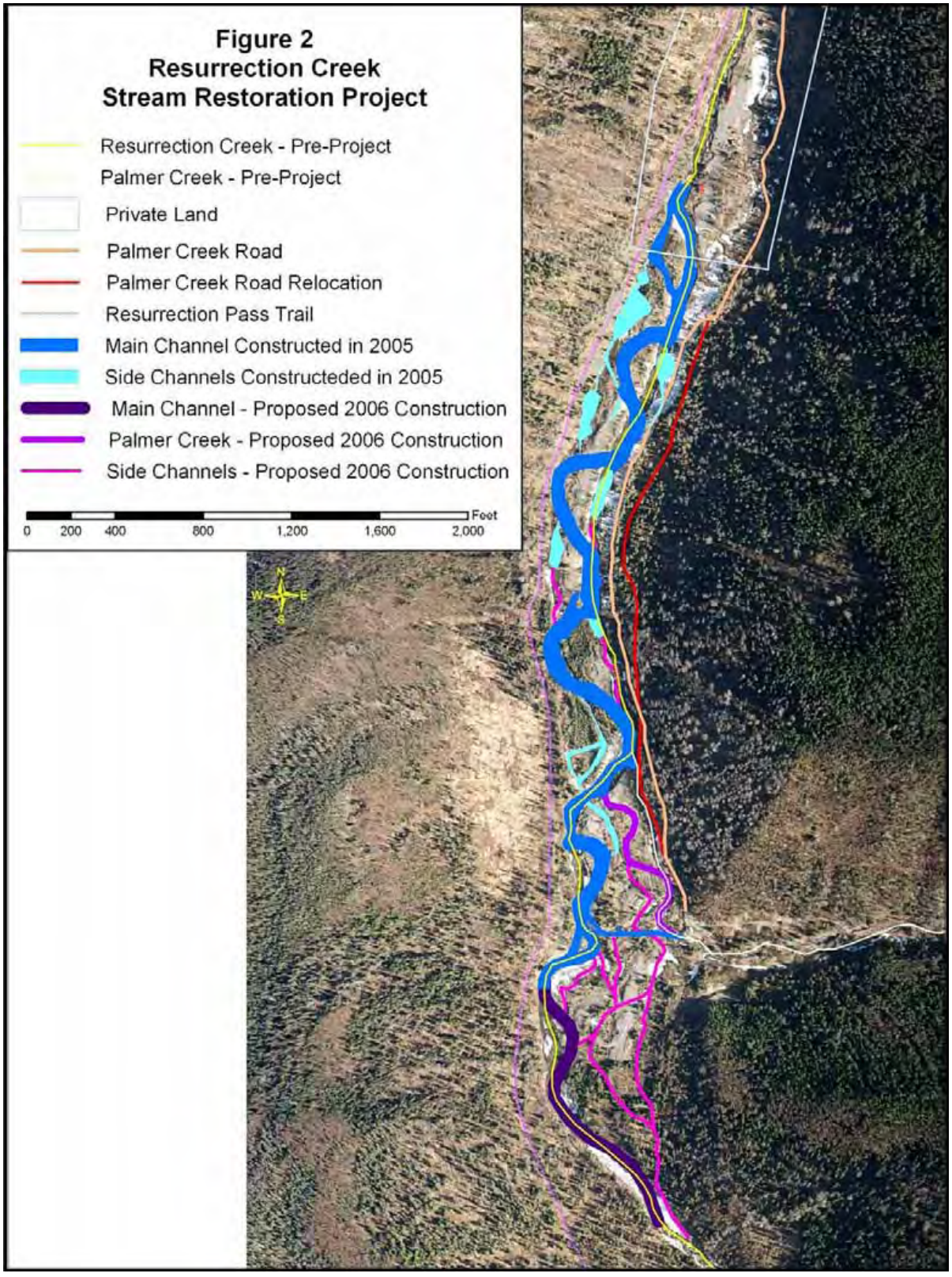


Figure 2
Resurrection Creek
Stream Restoration Project
Resurrection Creek - Pre-Project
Palmer Creek - Pre-Project
Private Land
Palmer Creek Road
Palmer Creek Road Relocation
Resurrection Pass Trail
Main Channel Constructed in 2005
Side Channels Constructeded in 2005
Main Channel - Proposed 2006 Construction
Palmer Creek - Proposed 2006 Construction
Side Channels - Proposed 2006 Construction
Foot
0 200 400 800 1,200 1,600 2,000
N
W
E
S